

AMENDMENTS TO THE CLAIMS

1. (currently amended): ~~Improved~~An improved reaction chamber for an epitaxial reactor comprising a belljar-(14) having a shoulder-(42) and made of insulating and transparent material, ~~such as quartz,~~ a susceptor-(24) provided with disk-shaped cavities-(34a-n) for receiving wafers (36a-n) of material to be treated and having an insulating and chemically resistant flat plate-(40) arranged above it, ~~characterized by using~~comprising:

a diffuser-(54) formed by a cap-(52) supplied by a central dome-piece-(88) connected to a symmetrical annular distribution chamber-(104) having a plurality of pipes-(106a-f) of the same length which connect ~~the~~ said annular chamber-(104) of the cap to a dome zone (42, 44) of the ~~belljar~~ belljar situated just underneath a neck-(46) connecting an upper flange-(48) to the dome-(42, 44), said plurality of pipes-(106a-f) ensuring a uniform distribution of flow at a lower speed;

a cylindrical zone of the belljar-(14) extended above the flat plate-(40) supported above the susceptor so as to eliminate any interference between the flat plate-(40) and shoulder (42);

a minimum internal diameter of the belljar-(14) so as to keep the belljar-(14) as far away as possible from the susceptor-(24); and

on the corners of the susceptor-(24), in its upper zone, projecting baffles-(122a-g) inserted into recesses formed in the body of the said susceptor-(24), said baffles-(122a-g) having a length about half the height ~~that of the corners~~ of the susceptor-(24).

2. (currently amended): The improved Reaction-reaction chamber for an epitaxial reactor, ~~according to of Claim 1, characterized in that~~ wherein the cap-(52) of the diffuser-(54) is fixed to an annular flange-(56) which is in turn fixed to ~~the~~ an upper thickened flange-(48) of the belljar (14) by means of a pair of two half counter-flanges (82a, 82b) gripping the annular flange-(56) against the upper thickened flange (48) of the belljar-(14).

3. (currently amended): The improved reaction~~Reaction~~ chamber for an epitaxial reactor, according to of Claim 2,

~~characterized in that~~ wherein the fixing of the cap (52) of the diffuser (54) to the annular flange (56) is performed by means of a plurality of spring-loaded tie-rods (58a-e) which push in an elastic manner the cap (52) against the annular flange (56).

4. (currently amended) The improved reaction~~Reaction~~ chamber for an epitaxial reactor, according to of Claim 2, ~~wherein characterized in that~~ the cap (52) is closed at the top by a flange (86) terminating in a dome-piece (88) communicating with a sleeve (96) for connection to an external source of gas to be used in the same reaction chamber, which dome-piece is provided with a bottom (100) defining at least one circular slit for ensuring a rigorously uniform distribution of gas to an annular chamber (104) for supplying the plurality of pipes (106a-f) emerging from the distributor (54) inside the belljar (14).

5. (currently amended): The improved reaction~~Reaction~~ chamber for an epitaxial reactor, according to of Claim 4,

~~characterized in that~~ wherein in addition to the slit in the bottom (100), a further annular slit (102) helps ensure the uniform distribution of gas to the annular chamber (104) supplying the outlet pipes (106a-f).

6. (currently amended): The improved reaction~~Reaction~~ chamber for an epitaxial reactor, according to of Claim 4, ~~characterized in that~~ wherein the cap (52) of the distributor (54) comprises an internal chamber (114) for the flow of a cooling fluid.

7. (currently amended): The improved reaction~~Reaction~~ chamber for an epitaxial reactor, according to of Claim 4, characterized in that the outlet pipes (106a-f) are made of a material which is chemically inert with respect to the gas used in the belljar.

8. (currently amended): The improved reaction ~~Reaction~~-chamber for an epitaxial reactor;
according to of Claim 7; wherein

~~characterized in that~~ the outlet pipes (106a-f) are made of glass.

9. (currently amended): The improved reaction ~~Reaction~~-chamber for an epitaxial reactor;
according to of Claim 7;

~~characterized in that~~ wherein the outlet pipes (106a-f) are made of ceramic material.

10. (currently amended): The improved reaction ~~Reaction~~-chamber for an epitaxial reactor;
according to of Claim 7;

~~characterized wherein in that~~ the outlet pipes (106a-f) are made of quartz.

11. (currently amended): The improved reaction ~~Reaction~~-chamber for an epitaxial reactor;
according to of claim ~~Claim~~ 1, characterized in that wherein the baffles (122a-f) fixed to the
susceptor (24) are made of material chemically inert with respect to the gases used in the said
chamber.

12. (currently amended) The improved reaction ~~Reaction~~-chamber for an epitaxial reactor;
according to of Claim 11;

~~characterized wherein in that~~ the baffles (122a-f) fixed to the susceptor (24) are
made of glass.

13. (currently amended): The improved reaction ~~Reaction~~-chamber for an epitaxial reactor;
according to of Claim 11;

~~characterized in that~~ wherein the baffles (122a-f) fixed to the susceptor (24) are
made of ceramic material.

14. (currently amended): ~~The improved reaction~~ Reaction chamber for an epitaxial reactor,
according to ~~of~~ Claim 11;

~~characterized in that~~ wherein the baffles (122a-f) fixed to the susceptor (24) are
made of quartz.

15. (currently amended): ~~The improved reaction~~ Reaction chamber for an epitaxial reactor,
according to ~~of~~ Claim 11, ~~characterized in that~~ wherein the baffles (122a-f) fixed to the susceptor
(24) are made of graphite lined with ~~silicon~~ silicon carbide.

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